From cape to chasuble: the conservation of the fabric of St Ermengol

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Photographs: CDMT, Quico Ortega and conservators CDMT

The conservation of the St Ermengol chasuble

In summer 2011, the conservation workshop of the Textile Museum and Documentation Centre was sent a piece known as the cape of St Ermengol by the Diocesan Museum of La Seu d'Urgell, and embarked on its analysis, documentation and conservation. The fabric was eventually identified as a chasuble. The findings were recorded in the report written by Silvia Saladrigas[1].

The chasuble was stored flat, sewn to a rigid display support after conservation in the 1970s[2]. The support was badly damaged due to the effects of light and humidity, which had completely degraded the original colour of the fabric and had caused the appearance of spots and halos, which in some places had even reached through to the support. So the first step after photographing the piece was to separate it from the display support. The piece was then disinfested using anoxia[3], since the preliminary examination had detected traces of insects and a possible fungal attack.

Documentation of the state of preservation

Prior to the conservation, we documented all the alterations and problems affecting the piece. We established that its condition was relatively unstable.

A full-scale sketch of the damage was made tracing and noting down all the changes on a *Melinex*®. We chose this method to gain as much information as possible; a smaller scale reproduction of the piece would not have highlighted all the changes.

The entire surface was covered in dust, dirt, debris and insect remains. Many of the fragments preserved solid material attached to the fabric that seemed to predate the first conservation process. From their shape, colour and texture we suspected that they might be remnants from aburial, as the arrangement of the fabric was very similar to that of other fabrics used as shrouds[4]. Above the remains a whitish film been created with small scales covering much of the central area of the chasuble. Some areas which had been consolidated during the earlier conservation had become separated from the support, and other

1 For more documentary information on the piece, see SALADRIGAS CHENG, S. "De capa a casulla: el teixit de Sant Ermengol", pp. 29-38, Datatèxtil 28, CDMT, Terrassa, 2013.

2 ALBERCH, T., GENDRAU, D. "Restauración del tejido s. XI denominada capa de San Ermengol", in: Congreso de Bienes culturales, Valladolid, 1980; VIVES, A. "Els teixits medievals del Museu Diocesà d'Urgell", in: Urgellia, vol.8 (1986).

3 VALENTÍN, Nieves, *El material Tèxtil. Susceptibilitats al biodeteriorament*, CDMT, Terrassa, 2009.

4 *Vestiduras pontificales del arzobispo Rodrigo Ximenéz de Rada. S. XIII*, p.78, fig. 73, Ministerio de Cultura, Madrid, 1994.

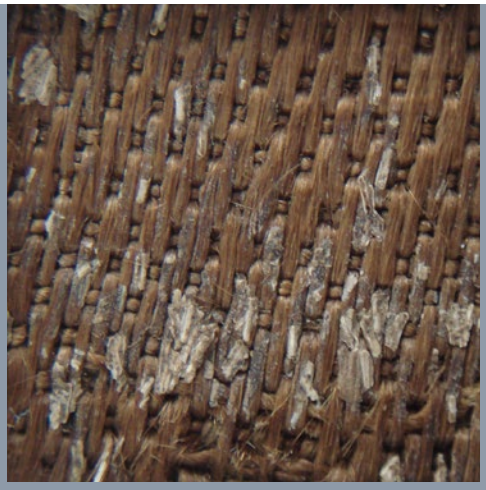
Map of the alterations in the chasuble.

parts of the peripheral fabric had disappeared, leaving visible only the stitches made in sewing the piece to the support.

The biggest problem affecting the fabric of the chasuble is the degradation of the natural silk fibres, accelerated by the presence of light and sudden changes in temperature and humidity. Over the years these fibres have suffered severe dehydration and loss of the protein matter, fibroin, which forms the threads of silk and provides the elasticity and brightness characteristic of this material[5]. The most obvious consequence is the breakdown of the silk filament, so that the fabric may eventually disintegrate. The threads lose their thickness and break, affecting the ligament and finally the structure of the fabric. In fact, varying degrees of degradation can be found along the entire surface of the piece. The most affected areas are the front and the upper part of the back, where most of the gaps and losses of fabric are seen.

5 LANDI, Sheila, *The textile conservator's manual*, p.15, Butterworth and Co, Kent, 1995.

Area showing the different types of degradation affecting the piece. See detail.



Details of whitish deposits located on the surface of the fabric.

Cleaning process using controlled aspiration.

The process of conservation

The conservation process began with the unstitching of the eight fragments from the support, followed by cleaning.

Fabrics can be either wet or dry cleaned. Dry cleaning removes the dust and dirt located on the surface of the fabric, which in many cases acts as a catalyst in fungal attacks and is responsible for the oxidation of the fibres. In our case the cleaning began with the aspiration of all the fragments using a *ConserVac*® low-suction vacuum preservation model to control the power applied at all times. As a safety measure we used a protective mesh that allows the suction of dirt without damaging the fabric. For the most strongly attached dirt we used *DA7C*® suction clips which allow microaspiration of pieces located within the ligament and thus conserve part of its former lustre and flexibility. This process of dry cleaning was applied to both the front and the back of the fragments and also identified two fragments of red silk taffeta, which might have belonged to the original lining of the chasuble.

Placing the fragments on the consolidation supports.

Wet cleaning is an irreversible process, since the addition of a solvent affects the internal structure of the fibres, but at the same time it removes adhered remains that dry cleaning cannot eliminate. After weighing up the pros and cons of this type of cleaning[6] we chose to use the immersion bath with deionized water, meaning that rinse baths were unnecessary. This process ensured more thorough cleaning and also rehydrated the fibres.

Before beginning wet cleaning, we enclosed all the fragments with tulle, so that wet cleaning could be done without any risk of loss or breakage of the fabric during bathing. The cleaning was done by immersing and buffering the fabric with deionized water alone, without the use of any detergent or surfactant. Once the cleaning was complete, during the drying process we aligned the warp and weft of the fabric and flattened it, removing creases and correcting deformities. To help us in this process we used flat glasses and weights that maintained the shape of the fragments (see cleaning process).

For the new consolidation support of the chasuble we chose a brown cotton taffeta. To make the shade closer to the chasuble we covered it with a bronze-coloured silk crepeline. On top of this we placed the eight fragments of the chasuble and consolidated it by sewing with one-headed silk thread. Various conservation stitches were used depending on the needs of each fragment. In the front, by far the most damaged area, conservation stitches could not be used and so we enclosed it with crepeline. We used a shade similar to the one used in the consolidation support.

6 TIMÁR-BALÁZSY, Agnes and EASTOP, Dinah, *Chemical principles of textile conservation*, pp. 195-213, Butterworth-Heinemann, Oxford, 1998.

Fixing the chasuble on the consolidation support. Photo: CDMT, Quico Ortega. ▲
Enclosing with crepeline. ▼

The chasuble after the consolidation and fixation.

Principal motif detail.

To avoid an abrupt change in colour between the enclosed areas and the others, we cut the perimeter of the crepeline following the shape of circles that make up the design of the piece, and we sewed it using an eyelet stitch. We then cut the consolidation support a centimetre larger than the circumference of the chasuble to be able to attach the edges without damaging the original fabric. At this point, the chasuble recovered its original shape, as the fabric was folded following the original marks on the sides.

Display[7]

To allow the exhibition of the piece in optimal conditions, a tailor-made support was created with conservation materials. The support has a semi-rigid metal frame covered with plastic lined with neutral pH cardboard and wheat starch glue, using the measurements of the chasuble folded flat. Once the support was made, we lifted it and folded it, creating a bell shape. To maintain the shape, we inserted a sheet of Ethafoam® covered with neutral pH cardboard on the bottom. The structure is held inside a metal T-shape which also serves as the base of the display case. This custom-built support allows the piece to lie perfectly, without creating any tensions or deformations.

To provide a lightweight padded surface for the support, we covered it with polyester wadding and a dark brown cotton canvas. The inside and the lower part were painted with acrylic paint in the same shade as the canvas. On the top, we sewed a piece of cloth vertically in the front, as the chasuble does not close completely. Finally we attached the chasuble on to the display stand with tacks to ensure its physical stability and to prevent any movement that might damage it.

Currently, the chasuble is stored inside a glass case built with conservation[8] materials in the Diocesan Museum of La Seu d'Urgell. This cabinet is illuminated with LED lights with a maximum intensity of 50 lux. Visitors may find the lighting rather weak; but it will allow the preservation of the piece for future generations, since silk is highly degradable by light. The degradation process of silk cannot be stopped, but it can be delayed by maintaining values of temperature and relative humidity as constant as possible.

7 The conservator Gemma Torra i Campos also helped to make the display support.
8 The display was made by Stem.

Making the display stand.

The chasuble on display.
Photos: CDMT, Quico Ortega.